The Association between Bacterial Vaginosis and First Trimester Miscarriage

A thesis
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in obstetrics and gynaecology

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ارتباط العدوى الجرثومية المهبلية بحدوث الاجهاض التلقائى أثناء الثلث الأول من الحمل

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"رب إني لما أنزلت إلي من خير فقير"

صدق الله العظيم

(القصص:٢٤)

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LIST OF ABBREVIATIONS

ADRS	*Adverse drug reactions.*
BV	*Bacterial vaginosis .*
CIN	*Cervical intra-epithelial neoplasia .*
CNS	*Central nervous system .*
DNA	*Deoxy- ribo nucleic acid .*
G.V	*Gardenella vaginalis .*
HCG	*Human chorionic gonadotrophin*
HIV	*Human immuno-deficiency virus .*
H2O2	*Hydrogen peroxide .*
HLA	*Human lucocytic antigen*
HPV	*Human papilloma virus .*
HSV-2	*Herpes simplex virus type 2 .*
IgA	*Immunoglobulin-A .*
IgG	*Immunoglobulin-G*
IgM	*Immunoglobulin-M*
IUDS	*Intra-uterine devices .*
IVF	*In vitro fertilization*

KOH	*Potassium hydroxide .*
LH	*Luteinizing hormone*
M.H	*Mycoplasma hominis .*
MRSA	*Methicillin-resistant staphylococcus aureus .*
PCOS	*Polycystic ovaries syndrome*
PID	*Pelvic inflammatory disease .*
PML	*Poly morphonuclear leucocytes .*
RPL	*Recurrent pregnancy loss*
RNA	*Ribo-nucleic acid .*
SCC	*Squamous cell carcinoma* **.**
STDS	*Sexually transmitted diseases .*
WBC	*White blood cell .*

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INTRODUCTION

Miscarriage or spontaneous abortion is the spontaneous end of pregnancy at a stage where the embryo or fetus is incapable of surviving, generally defined in humans at prior to 20 weeks of gestation. Miscarriage is the most common complication of pregnancy ***(Petrozza, John C, 2006).***

Three-fourths of spontaneous abortion occurs before 16th week; of these, three-fourths occur before eighth week. Almost 20% of clinically recognized pregnancies terminate in spontaneous abortion ***(George L, 2002)***.

Causes of spontaneous abortion can be summarized to be: chromosomal abnormalities, infection, hormonal problems, incompetent cervix, immunological disorders, uterine abnormalities, nutritional and environmental factors. In many cases of miscarriage no obvious cause was found ***(Mikio A and Nihira , 2009)***.

First trimester loss may occur early without the mother being aware that she has been pregnant and often attributed to failure of implantation or genetic defects but The contribution of infection to second trimester loss is more established ***(Hay ,1998).***

Early diagnosis and treatment or prevention of the causes of miscarriage is of fundamental importance in avoiding many harmful

maternal complications not only fetal loss but also severe hemorrhage, sepsis, bacterial shock, acute renal failure and also iatrogenic complications as incomplete removal of the fetus and placenta, cervical laceration and uterine perforation during sounding of the uterus, dilatation or curettage ***(Cheung, Sahota, Haines, Chang, 1998).***

Bacterial vaginosis is the most prevalent form of vaginal infection in women during childbearing age the average incidence of bacterial vaginosis varies and reported to be 30-65% in patients visiting gynaecological and sexually transmitted diseases clinics and 10-25% in patient visiting obstetric clinics (***Hansen, 2004)***

Bacterial vaginosis has been associated with many gynaecological complications such as cervicitis, salpingitis, endometritis and PID also it is associated with obstetric complications such as a two to seven fold increase in the risk of mid-trimester miscarriage and preterm birth ***(Hillier, 1995)*** also an increased risk of preterm rupture of membranes, chorioamnionitis, low birth weight and postpartum endometritis ***(Purwar, 2001).***

A typical clinical symptoms of bacterial vaginosis is a thin, homogenous, gray, malodorous vaginal discharge, without significant pruritis or pain However more than 50% of all women with bacterial vaginosis are asymptomatic ***(Eschenbach, 1999).***

Diagnosis of bacterial vaginosis is established by clinical criteria of Amsel whereby 3 of the 4 following signs are found:-

1- Homogenous vaginal discharge.

2- Vaginal fluid ph >4.5.

3- Release of fishy odour on addition of 10% KOH.

4- Detection of clue cells on saline wet mount preparation ***(Amsel 1983; Navarrete , 2000).***

Vaginal infection by bacterial vaginosis may increase the risk of miscarriage as it is associated with endometritis which may affect the implantation of the embryo and placenta so bacterial vaginosis may have a detrimental effect on the outcome of the first trimester (***Spandorfer, 2001).***

AIM OF THE WORK

To assess the association between bacterial vaginosis and first trimester miscarriage.

SUBJECTS & METHODS

Design

This study is a cohort study. Designed to investigate the association between bacterial vaginosis and first trimester miscarriage by screening for bacterial vaginosis using Nugent gram stain scoring system among pregnant women at 7 weeks of gestation and follow them up to the end of first trimester to compare the incidence of first trimester miscarriage among group of women with normal vaginal flora against group of women with bacterial vaginosis.

Participants and setting

We will recruit the Participants from women who will attend to antenatal care clinic, faculty of medicine – Ain Shams University. All participants will give their oral consents to participate and we will obtain ethical approval for our study from the local ethics committee.

Sample size

Using alpha error at level of 0.05 and power of 0.80 and assuming that the prevalence of bacterial vaginosis among pregnant women is 25% and a RR=2.03. We need to follow up of 180 pregnant women during the first trimester.